High Sensitivity Raman Spectroscopy Device 785nm Laser Deep Cooling

Our Product Introduction

Basic Information

- Place of Origin: CHINA
- Brand Name: JINSP
- Certification: CE ISO9001
- Model Number: RS2000T-4
- Minimum Order Quantity: 1
- Price: Negotiable
- Packaging Details: 1PC/BOX
- Delivery Time: 60-80 working days
- Payment Terms: T/T
- Supply Ability: 20PCS Per Month

Product Specification

- Laser Wavelength: 785nm
- Wavelength Accuracy: 0.2nm
- Wavelength Stability: 0.01nm
- Output Data Format: Spc Standard Spectrum, Prn, Txt And Other Formats Are Optional
- Communication Protocols: Modbus
- Connectivity: USB 2.0
- Power Supply: 100 ~ 240 VAC, 50 ~ 60 Hz
- Detection Accuracy: 0.01%
- Highlight: **High Sensitivity Raman Spectroscopy Device**, **Raman Spectroscopy Device 785nm**, **785nm raman spectroscopy instruments**

More Images

Product Description

785nm Deep Cooling Four Multi-channel Online Process Raman Spectroscopy Analyzer

Product Description:

The development and manufacturing processes within the realms of chemistry, pharmaceuticals, and materials science necessitate the precise and quantitative analysis of various components present within the substances being studied. Traditionally, this analytical task has been accomplished through the utilization of offline laboratory analysis techniques. In this conventional approach, samples are meticulously extracted from the production environment and transported to a dedicated laboratory setting. Once there, these samples undergo a rigorous analysis process employing an array of sophisticated instruments. These instruments include, but are not limited to, chromatography systems, mass spectrometers, and nuclear magnetic resonance (NMR) spectroscopy equipment. These analytical tools work in unison to provide comprehensive data regarding the composition and concentration of each individual component within the sample.

JINSP provides online monitoring solutions for chemical, pharmaceutical, and material process research and production. It enables in-situ, real-time, continuous, and rapid online monitoring of the content of each component in reactions.

JINSP RS2000T-4 is designed with a 4-channel optical probe for switching online analysis in multiple reaction systems, achieving simultaneous process control for multiple systems

Features:

● Four channels for switchable detection, real-time display of changes in reactants and products.
●Working with specially designed Raman probes, can withstand extreme reaction conditions such as strong acid, strong alkali, strong corrosiveness, high temperature, and high pressure.
●Real-time response in seconds, no need to wait, providing analysis results promptly.
●No sampling or sample processing required, in-situ monitoring without interference to the reaction system.
●Continuous monitoring to quickly determine the reaction endpoint and alert for any anomalies.

Technical Parameters:

Technical Parameter	Value
Product	Online Raman Analyzer
Measurement Type	Raman Spectrometer
Laser wavelength	785nm
Wavelength accuracy	0.2 nm
Wavelength stability	0.01 nm
Sample Type	Liquid
Number of detection channels	four-channel switching detection
Standard Probe	1pc 1.3 m non-immersed fiber optic probe (PR100)
Software functions	1. Online Monitoring: Continuous real-time collection of single-channel signals, providing real-time substance content and trend changes, enabling intelligent analysis of unknown components during the reaction process; 2. Data Analysis: Capable of processing data through smoothing, peak finding, noise reduction, baseline subtraction, difference spectra, etc; 3. Model Establishment: establishes a quantitative model using known content samples and automatically builds a quantitative model based on real-time data collected during the reaction process.
Power supply	100 ~ 240 VAC ,50 ~ 60 Hz
Operating temperature	0 ~ 40
Dimensions	496x312x185mm
N. Weight	≤10 kg

Applications:

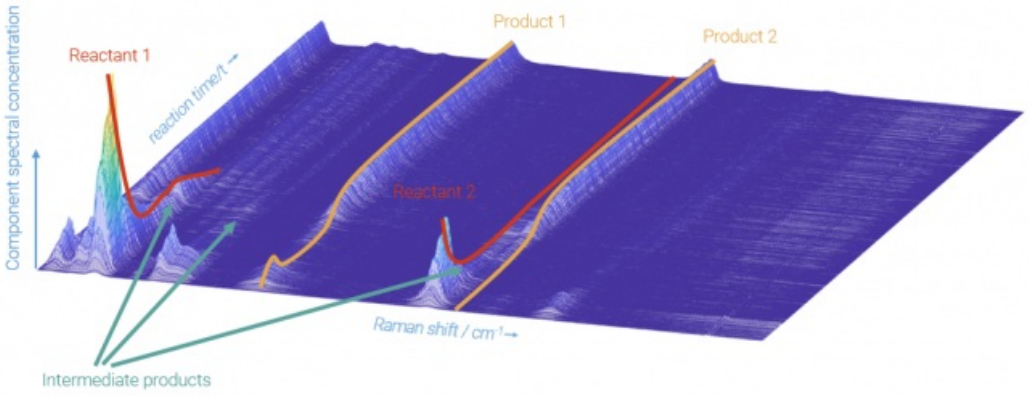
Li-ion battery industry
Research on the synthesis process of bis(fluorosulfonyl)amide

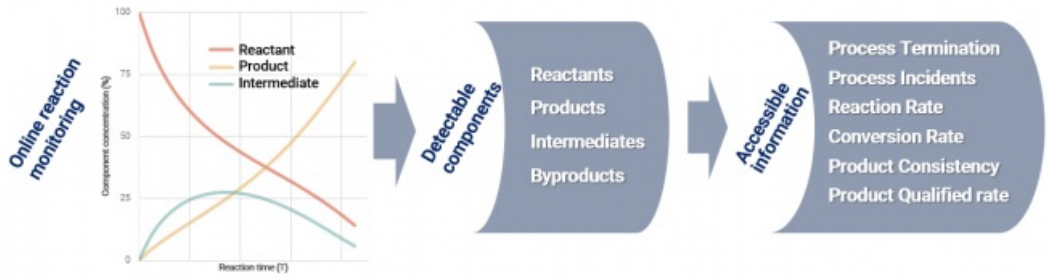
Biopharmaceutical industry
Drug crystal form research and consistency evaluation
Quality Control in Biofermentation Engineering

Fine chemical industry
Research on the process of producing furfuryl alcohol by hydrogenation reaction of furfural
Process control of bioenzyme catalytic reactions of nitrile compounds
A certain ultra-low temperature nitrification reaction
Research on o-xylene nitration reaction process

Eg: Chemical/Biological Process R&D with Tight Schedules and Emphasis on Time Efficiency

Online monitoring provides real-time continuous data, quickly revealing reaction mechanisms. Big data helps researchers understand the reaction process, significantly accelerating the R&D cycle. Traditional offline detection provides limited information and delayed results, leading to low R&D efficiency.
Typical users: Process R&D personnel in pharmaceutical and biopharmaceutical companies; R&D personnel in new materials and chemical companies.





Can withstand extreme reaction conditions such as strong acid, strong alkali, strong corrosiveness, high temperature, and high pressure

Real-time response in seconds, no need to wait, providing analysis results promptly.

No sampling or sample processing required, in-situ monitoring without interference to the reaction system.

Continuous monitoring to quickly determine the reaction endpoint and alert for any anomalies.

1.Analysis of Chemical Reactions/Biological Processes under extreme conditions

Under conditions of strong acids, strong alkalis, high temperature, high pressure, strong corrosion, and toxicity, conventional instrument analysis methods may face challenges in sampling or cannot withstand active active samples. However, online monitoring optical probes, specially designed to adapt to extreme reaction environments, stand out as the sole solution.

Typical Users: Researchers involved in extreme chemical reactions at new material companies, chemical enterprises, and research institutes.

2.Research and Analysis on Intermediate Reaction Components/Unstabl

Short-lived and unstable reaction intermediates undergo rapid post-sampling changes, making offline detection inadequate for such components. In contrast, real-time, in-situ monitoring through online analysis has no impact on the reaction system and can effectively capture changes in intermediates and unstable components.
Typical Users: Experts and scholars from universities and research institutes interested in the study of reaction intermediates.

3.Time-Critical Research and Development in Chemical/Bio-processes

In research and development with tight timelines, emphasizing time costs in chemical and bioprocess development, online monitoring provides real-time and continuous data results. It promptly reveals reaction mechanisms, and big data assists R&D personnel in understanding the reaction process, significantly accelerating the development cycle.Traditional offline detection provides limited information with delayed results, leading to lower R&D efficiency.
Typical Users: Process development professionals in pharmaceutical and biopharmaceutical companies; R&D personnel in new materials and chemical industries.

4.Timely Intervention in Chemical Reactions /Biological Processes with Reaction Anomalies or Endpoints

Anomalies of Endpoints

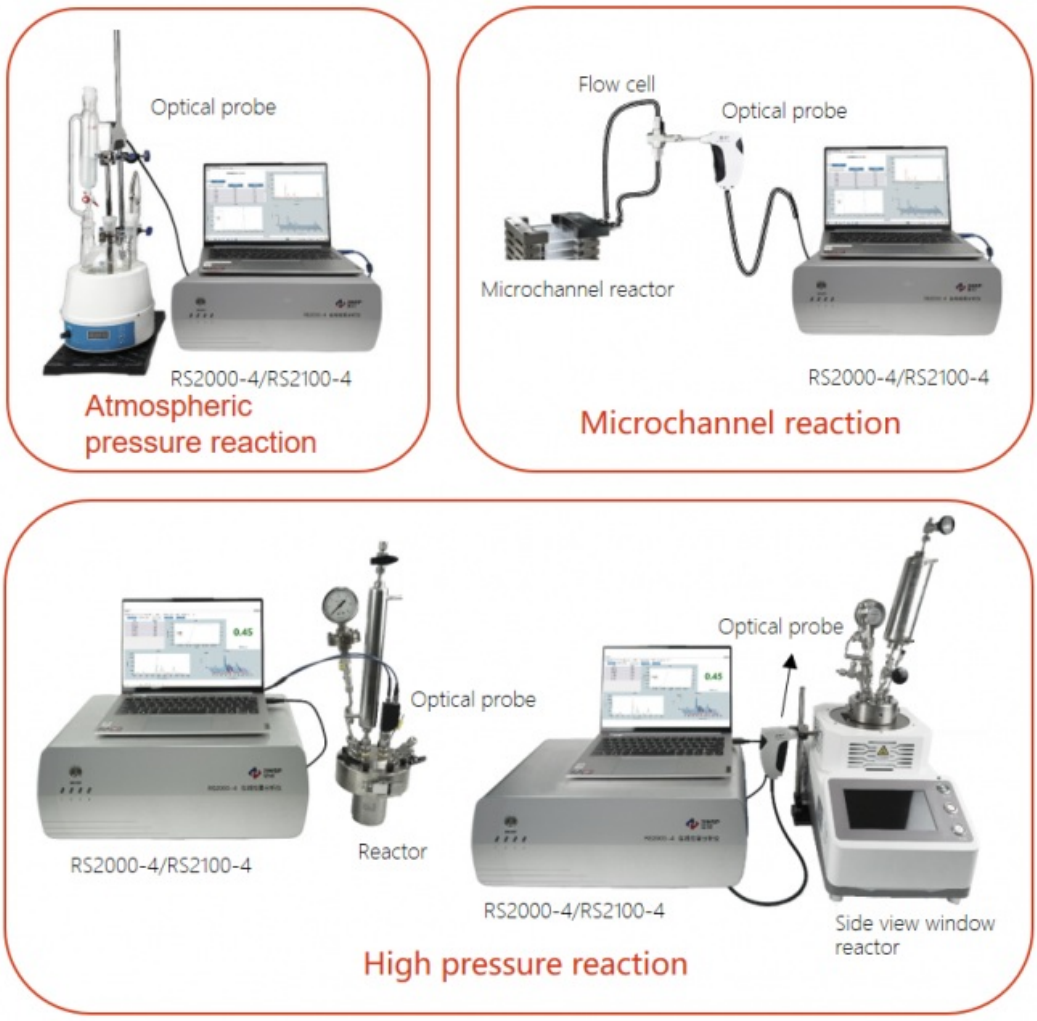
In chemical reactions and biological processes such as biofermentation and enzyme-catalyzed reactions, the activity of cells and enzymes is susceptible to the influence of relevant components in the system. Therefore, real-time monitoring of abnormal concentrations of these components and timely intervention are crucial for maintaining efficient reactions. Online monitoring provides real-time information about the components, while offline detection, due to delayed results and limited sampling frequency, may miss the intervention time window, leading to reaction anomalies. Typical Users: Research and production personnel in biofermentation companies, pharmaceutical/chemical companies involved in enzyme-catalyzed reactions, and enterprises engaged in the research and synthesis of peptides and protein drugs.

5.Product quality/Consistency Control in Large-Scale Production

In the large-scale production of chemical and biological processes, ensuring the consistency of product quality requires batch-by-batch or real-time analysis and testing of reaction products. Online monitoring technology, with its advantages of speed and continuity, can automate quality control for 100% of batch products. In contrast, offline detection technology, due to its complex processes and delayed results, often relies on sampling, posing quality risks for products not sampled.
Typical Users: Process production personnel in pharmaceutical and biopharmaceutical companies; production personnel in new materials and chemical companies.

Usage models:

RS2000T-4 has three usage modes in the laboratory, and each mode requires different accessories.
1. The first mode uses an immersed long probe that goes deep down to the liquid level of the reaction system to monitor each reaction component. Depending on the reaction vessel, reaction conditions, and system, different specifications of probes are configured.
2. The second mode involves using a flow cell to connect a bypass probe for online monitoring, which is suitable for reactors like microchannel reactors. Various probes are configured based on the specific reaction vessel and conditions.
3. The third mode utilizes an optical probe directly aligned with the side window of the reaction vessel for reaction monitoring.



FAQ:

Q1: This is the first time I use it, is it easy to operate?
A1:We will send you a manual and guide video in English, it can teach you how to operate the spectrometer. Also, our technicians will offer professional technical operation meetings.

Q2: Can you offer an operation training?
A2: Your technicians can come to our factory for training. Jinsp engineers can go to your place for local support (installation, training, debugging, maintenance).

Q3: How to receive the best price in the shortest time?
A3: When you send us an inquiry, please kindly offer details with wavelength,detector, effective pixels, focal length, and so on. We will send you a quotation with details soon to your email.

Q4:If the spectrometer has a problem in my place, what could I do?
A4: The spectrometer has a one-year warranty. If it breaks down, our technician will figure out what the problem may be, according to the client's feedback. We can repair for free within one year warranty.

Q5: What about quality assurance?
A5:We have a quality inspection team. All goods will go through quality inspection before shipment. We can send you pictures for inspection.

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